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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,716	04/13/2001	Yuri Ton	00/21144	4965

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EXAMINER	
NGUYEN, SON T	
ART UNIT	**PAPER NUMBER**
3643	

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/833,716	TON ET AL.
	Examiner	Art Unit
	Son T. Nguyen	3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-7,9-19,21-29,31-46 and 48-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-7,9-19,21-29,31-46,48-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

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Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1,3-7,9-15,21-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Huguet et al. (US 4638594) in view of Gardner et al. (US 4755942).

For claim 1, Huguet et al. disclose a method of assessing a state of a field grown crop (col. 1, lines 9-12 & col. 2, lines 11-37) comprising the steps of collecting data pertaining to at least one plant derived parameter over a predetermined portion of the growth cycle of the crop (col. 2, lines 38-53, col. 3, line 9, col. 5 & lines 57-48), wherein the collecting is effected by at least one sensor positioned on a plant of the crop (see figures 5 & 6) and whereas the crop is unharvested (col. 2, lines 28-31 & col. 5, lines 47-48, the fruits are necessary in the method so the fruits are not harvested yet due to measurement needed for the study); and analyzing the data collected over the portion of the growth cycle to thereby identify a trend in the data over at least a portion of the growth cycle, the trend being indicative of the state of the crop (col. 2, lines 38-68, col. 3, lines 1-14 & col. 5, all lines). In addition, Huguet et al. disclose two trees 10 with the same selection and analytical criteria. However, Huguet et al. do not specifically teach correlating the trend from one tree to the trend of the other tree.

Gardner et al. teach a method of assessing the state of a field grown crop with similar steps as that of Huguet et al., and Gardner et al. also mentioned correlating trend of one plant to another plant in the crop (col. 5, lines 1-15, col. 7, lines 38-68, col. 12, all lines, the trends are obtained from a plurality of plants within the whole field and data are entered into the computer 134 for comparison). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the step of correlating trends as taught by Gardner et al. in the method of Huguet et al. in order to study the trend of all plants in the field and to compare conditions affecting each plant. Note, incorporating the correlating step into Huguet et al.'s method does not alter their invention because they are doing study on at least 2 trees, therefore, it would not make sense just to study only one tree out of a plurality of trees in the field.

For claim 3, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose correlating the trend to at least one environmental parameter data acquired prior to or during the growth cycle (col. 2, lines 38-57, col. 5, lines 35-40 and lines 64-66).

For claim 4, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose the trend represents changes (positive, negative or no change) in value of the plant's related parameter over the growth cycle (see figures of graphs).

For claim 5, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose graphically representing the data (see figures 1-3).

For claim 6, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose the parameter being stem diameter, fruit growth rate, and stem elongation rate (col. 5, lines 47-48 and col. 7, all lines).

For claim 7, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose the environmental parameter data being soil moisture data (col. 5, lines 64-68).

For claim 9, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose the data is effected by a processing unit (col. 6, lines 44-68).

For claim 10, in addition to the above explanation, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose a user client being in communication with the sensors 11 (col. 6, lines 14-68).

For claim 11, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose the communication between the user client and the sensors is effected via a communication network (col. 6, lines 44-68).

For claim 12, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose a display for displaying the data collected (col. 6, lines 44-68, the computer's monitor).

For claim 13, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose at least one device being in communication with the user client, the device being for modifying the state of the crop (col. 5, lines 63-68, col. 6, lines 14-23 & lines 61-68, the sensors are connected to the control unit which is connected to the irrigation device, thus everything is in communication with each other).

For claim 14, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose the device is an irrigation device (col. 2, lines 58-61 & col. 3, lines 1-7).

For claim 15, see the above explanation.

For claims 21-25,27, see the above explanation.

For claim 26, Huguet et al. as modified by Gardner et al. (emphasis on Huguet et al.) further disclose the sensor 11 being positioned on the 2nd plant (see figures 5 & 6).

3. **Claim 28** is rejected under 35 U.S.C. 103(a) as being unpatentable over Huguet et al. (as above). In addition to the above, Huguet et al. further disclose co-cultivating a first plant 10 with a crop of a second plant 10 (there are more than one trees in the method of Huguet et al., see col. 7, lines 1-20) and monitoring the plant (same as the analyzing step). However, Huguet et al. are silent regarding the 1st plant being more sensitive to a change in environmental factor than the 2nd plant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a 1st plant with more sensitivity to change in the environment than a 2nd plant in the method of Huguet et al., because it would be a wasteful and costly study on how environment affect plants if one was to select a perfect plant which is not prone to any environmental effect; thus, one would have to have a control plant and a sensitive plant.

4. **Claims 29,31-55** are rejected under 35 U.S.C. 103(a) as being unpatentable over Huguet et al. (US 4638594) in view of Weller et al. (US 4647533) and Gardner et al. (US 4755942).

For claim 29, all steps are taught by Huguet et al. as explained in the above. The limitations that are not taught in Huguet et al. is assessing the state of a greenhouse grown crop and correlating the trend from one tree to the trend of the other tree.

It is notoriously well known in the plant art that a crop can be grown in a greenhouse first and then planted in the field later because some crops at early stage of growth are sensitive to weather condition so it is better to grow them in a greenhouse first until they are strong enough to be planted in the field. For example, such known crops are taught by Weller et al. Weller et al. teach in claim 1 that the crop is grown in a greenhouse first and then planting the crop in the field (claim 1, parts (b) & (c)). It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a greenhouse grown crop as taught by Weller et al. in the method of Huguet et al. since it is notoriously well known in the art to grow crop in a greenhouse first and then planted in the field later as taught by Weller et al. because some crops at early stage of growth are sensitive to weather condition so it is better to grow them in a greenhouse first until they are strong enough to be planted in the field.

Gardner et al. teach a method of assessing the state of a field grown crop with similar steps as that of Huguet et al., and Gardner et al. also mentioned correlating trend of one plant to another plant in the crop (col. 5, lines 1-15, col. 7, lines 38-68, col. 12, all lines, the trends are obtained from a plurality of plants within the whole field and data are entered into the computer 134 for comparison). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the step of correlating trends as taught by Gardner et al. in the method of Huguet et al. in

order to study the trend of all plants in the field and to compare conditions affecting each plant. Note, incorporating the correlating step into Huguet et al.'s method does not alter their invention because they are doing study on at least 2 trees, therefore, it would not make sense just to study only one tree out of a plurality of trees in the field.

For claims 31-44,46-54, see the above explanation.

For claim 55, in addition to the above, Huguet et al. as modified by Weller et al. and Gardner et al. (emphasis on Huguet et al.) further disclose co-cultivating a first plant 10 with a crop of a second plant 10 (there are more than one trees in the method of Huguet et al., see col. 7, lines 1-20) and monitoring the plant (same as the analyzing step). However, Huguet et al. as modified by Weller et al. and Gardner et al. are silent regarding the 1st plant being more sensitive to a change in environmental factor than the 2nd plant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a 1st plant with more sensitivity to change in the environment than a 2nd plant in the method of Huguet et al. as modified by Weller et al. and Gardner et al., because it would be a wasteful and costly study on how environment affect plants if one was to select a perfect plant which is not prone to any environmental effect; thus, one would have to have a control plant and a sensitive plant.

Response to Arguments

5. Applicants arguments with respect to all claim have been considered but are moot in view of the new ground(s) of rejection. However, pertinent arguments regarding Huguet et al. as modified by Gardner et al. (mainly the 103 rejection and not 102 for the 102 is no longer applicable) will be addressed herein.

Applicants argued that Huguet et al. as modified by Gardner et al. do not teach plant parameter data has stated in the specification.

Clearly from Huguet et al. (the main prior art), they teach in col. 2, lines 27-53, plant parameter data such as fruit, stem or trunk diameters, which is what Applicants call for in their invention as stem diameter data and fruit growth rate data.

Applicants argued that the present invention teaches the correlation of trends derived from one plant derived parameter with trends derived from another plant derived parameter, and not, as asserted by the Examiner, the correlation of trends from one plant to other plants. Deriving trends from one plant to another or other plants is the same thing as obtaining trends derived from one plant to other plant because each one of the plants have separate set of data to compare with each other, thus making it one plant derived parameter (from one plant) and another plant derived parameter (from the other plant). For example, Huguet et al. teach two trees 10 and two sensors 11 to obtain data from those two trees. The data obtained from the first tree 10 is the one plant derived parameter (such as fruit, stem or trunk diameter as stated in col. 2, lines 32-50), and the data obtained from the second tree 10 is the another plant derived parameter (again, fruit, stem or trunk diameter as stated in col. 2, lines 32-50).

Applicants argued that Gardener et al. do not provide measurements of plant derived parameter but instead provide measurements of environmental parameters. Gardener et al., as explained above, are not relied on for a teaching of plant derived parameter, for Huguet et al. already teach this limitation. Gardener et al., however, were relied upon for teaching of correlating trend studies of one plant to other

plants for comparison of the different trends This correlation of trends in plants, not only is taught by Gardener et al., but extremely well known in scientific studies of plants. It is known to compare data, parameters or trends in various plants so as to study the plants' reactions to different factors.

Applicants argued that the Examiner's assessment of wastefulness, costliness and senselessness (regarding rejection of claim 28 of a 1st plant with more sensitivity to change than a 2nd plant) is merely statement of an opinion without providing objective basis. It is notoriously well known in the scientific world that no two plants are exactly alike, for each have its own genetic code. For example, even if you have two similar species of say apple trees, one tree would react different from the other tree if both were to be burden with some sort of stress like cold temperature or over-watering. In any experimental procedure, there is always one control plant and then one sensitive plant so as to provide comparison on how certain plants are prone to react to stress put upon them. Why would anyone want to study plants and not have this comparison or different types of sensitivity plants? This would be wasteful in studying plants if you don't have different types of sensitive plants to study from.

Applicants argued that Weller et al. do not teach a crop being grown in a greenhouse and then planted in the field later. To the contrary, Weller et al. teach a well known process in plant husbandry and that is to grow a crop in a greenhouse first and then plant the crop in the field later (claim 1, parts b,c). Again, Applicants are claiming something that is so notoriously well known in the art as demonstrated by

Weller et al. Weller et al. are relied upon, not for screening of strains of bacteria as commented by Applicants, but for a known plant process of growing plants in a greenhouse first and then plant them in the field. Assessment of plant derived parameters is already taught in Huguet et al.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son T. Nguyen whose telephone number is (703) 305-0765. The examiner can normally be reached on Monday - Friday from 9:00 a.m. to 5:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon, can be reached at (703) 308-2574. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Customer Service at (703) 872-9325. The official fax number is 703-872-9306.

Son T. Nguyen
Primary Examiner, GAU 3643
May 3, 2004